Annual Drinking Water Quality Report
For the Year 2002

MacDill Air Force Base, Florida

INTRODUCTION

We're pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

The Hillsborough River Water Plant is the City of Tampa's drinking water supply and the sole source of water for MacDill AFB. This plant is located approximately 10 miles north of the base and pipes the water through three separate point of entry service connections to MacDill AFB. The source of water for the Hillsborough plant is the Hillsborough River. Water quality of this surface water supply varies seasonally due to rainfall input. Water treatment at the plant includes: coagulation, settling, ozonation, corrosion control treatment, and disinfection.

To better control disinfectant residual levels, MacDill AFB is able to increase the disinfectant level using a chlorine booster system at the base water plant. This system consists of: chemical storage tanks, two chlorine meters, chemical metering pumps, and chemical injection points. The system uses calcium hypochlorite and aqueous ammonia to form the chloramine compounds that supplement the disinfectant residual provided by the city and required by state regulation.

WATER QUALITY TESTING

Both the City of Tampa and MacDill AFB routinely tests for contaminants in your drinking water according to Federal and State laws, rules, and regulations. This report shows water quality test results and what they mean. Except where indicated otherwise, this report is based on the results of our required monitoring for the period of January 1 to December 31, 2002. If you have any questions concerning your water utility, please contact Mr. Michael Harrison, 6 CES/CEVW, at (813) 828-0458. Please contact the Bioenvironmental Engineering office, 6 AMDS/SGPB, at (813) 827-9570 if you have any health-related drinking water concerns or general questions about this report. For more information on the quality of the source water, please contact the Tampa Water Departments Consumer Affairs Division at (813) 274-8121.

Table Definitions

In the water quality data tables provided below, you may find unfamiliar terms and abbreviations. To help you better understand these terms, we've provided the following definitions:

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal or MRDLG: The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Parts per billion (ppb) or Micrograms per liter (ug/l): One part by weight of analyte to 1 billion parts by weight of the water sample.

Picocurie per liter (pCi/L): Measure of radioactivity in water.

Nephelometric Turbidity Unit (NTU): Measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Not Detected or ND: Means that the substance was not found by laboratory analysis.

Parts per million (ppm) or Milligrams per liter (mg/l): One part by weight of analyte to 1 million parts by weight of the water sample.

Treatment Technique (TT): A required process intended to reduce the levels of a contaminant in drinking water.

SOURCES OF CONTAMINATION

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the

land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
(B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
(D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

ADDITIONAL INFORMATION ABOUT DRINKING WATER

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

CLOSING

We at MacDill AFB would like you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed

to insuring the quality of your water. If you have any questions or concerns about the information provided, please feel free to call any of the numbers listed above.

ATTACHMENTS:

1. MacDill AFB Water Quality Data Table
2. City of Tampa Water Quality Data Table

MACDILL AFB WATER QUALITY DATA TABLE- Page 1 of 2

Total coliform bacteria: Highest Monthly Percentage/Number is the highest monthly number of positive samples for systems collecting fewer than 40 samples per month.

Microbiological Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly Number	MCLG	MCL	Likely Source of Contamination
1. Total Coliform Bacteria	Monthly 02	N	1	0	For systems collecting fewer than 40 samples per month: presence of coliform bacteria in 1 sample collected during a month.	Naturally present in the environment
2. Fecal coliform and *E.coli*	Monthly 02	N	0	0	0	Human and animal fecal waste

Inorganic Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90^{th} Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Lead and Copper (Tap Water)							
3. Copper (tap water) (ppm)	06/02	Y	1.5	10	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
4. Copper (tap water) (ppm)	11/02	N	1.2	2	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
5. Lead (tap water) (ppb)	06/02	Y	16	5	0	15	Corrosion of household plumbing systems, erosion of natural deposits
6. Lead (tap water) (ppb)	11/02	N	5	2	0	15	Corrosion of household plumbing systems, erosion of natural deposits

MACDILL AFB WATER QUALITY DATA TABLE- Page 2 of 2

Information on Lead and Copper in Drinking Water

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. Our water system was in violation of federal and state water quality standards for lead and copper based on drinking water samples collected in June 2002 (for the January to June 2002 monitoring period). Drinking water samples collected in November 2002 showed that the base drinking water met the federal and state water quality standards for lead and copper.

In response to the June 2002 levels of lead and copper in some water samples, MacDill AFB conducted a series of Town Hall meetings to inform residents of the test results, provide health information from the base medical staff, and identify measures that can be taken by personnel to reduce lead and copper concentrations in drinking water. Educational brochures were provided to all housing occupants in August 2002. Additional brochures are available upon request through the Bioenvironmental Engineering office.

Infants and children who drink water containing lead in excess of the MCL could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Residents and other base personnel can significantly reduce potential exposure to lead and copper by letting cold water run from the tap for 15 to 30 seconds before using it for drinking or cooking. This practice allows the water that sits idle in your plumbing to be flushed out prior to use. The longer water resides in your home's plumbing, the more dissolved metals it may contain. Flushing water is a simple and inexpensive measure you can take to protect your family's health.

For more information on lead or copper in your drinking water, contact MacDill AFB Bioenvironmental Engineering office at (813) 827-9570.

CITY OF TAMPA WATER QUALITY DATA TABLE – Page 1 of 3

The City of Tampa Water Department, for inclusion in our annual report, provided the information in the following chart to MacDill AFB. Listed are the 24 compounds detected in Tampa's drinking water during calendar year 2002. Not listed are the hundreds of other compounds for which the City of Tampa tested but were not detected.

Microbiological Contaminants
(We monitor for total coliform throughout the distribution system every month. More than 300 samples are collected.)

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly Number of Positive Samples	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	Daily 2002	N	2	0	For systems collecting at least 40 samples per month: presence of coliform bacteria in 5% or more of monthly samples. For systems collecting fewer than 40 samples per month: presence of coliform bacteria in 1 or more samples collected during a month.	Naturally present in the environment

Turbidity

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	The Highest Single Measurement	The Lowest Monthly Percentage of Samples Meeting Regulatory Limits	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	Daily 2002	Y	0.89	91.3	N/A	TT	Soil runoff

Radiological Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	The Highest Single Measurement	The Lowest Monthly Percentage of Samples Meeting Regulatory Limits	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/l)	May 2002	N	1.3	ND – 1.3	0	15	Erosion of natural deposits
*Beta/photon emitters (pCi/L)	May 2002	N	2.8	ND – 2.8	0	50*	Decay of natural and man-made deposits

*EPA considers 50 pCi/L to be the level of concern for beta particles. Results in the Level Detected column for radiological contaminants the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency.

Information on Turbidity in Drinking Water

Turbidity monitoring is a requirement for the City of Tampa's water system. The drinking water treatment technique for turbidity was in violation for July 2002. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. The City of Tampa analyzed its water during the period of excess turbidity and did not detect any disease causing organisms. If you have questions concerning turbidity, please contact the Tampa Water Department at (813) 274-8121.

CITY OF TAMPA WATER QUALITY DATA TABLE – Page 2 of 3

Inorganic Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Asbestos (MFL)	May 2002	N	ND	NA	7	7	Decay of asbestos cement water mains; erosion of natural deposits
Barium (ppm)	May 2002	N	0.03	0.01 – 0.03	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	May 2002	N	0.70	0.63 – 0.70	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (ppm)	May 2002	N	0.082	0.020 – 0.082	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Nitrate + Nitrite	May 2002	N	0.082	0.020 – 0.082	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	May 2002	N	67	6 – 67	N/A	160	Salt water intrusion, leaching from soil

Stage 1 Disinfectant/Disinfection By-Product (D/DBP) Parameters

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Bromate (ppb)	Monthly 2002	N	4	ND – 4	MCLG =0	MCL = 10	By-product of drinking water disinfection
Chloramines(ppm)	Daily 2002	N	2.6	0.6-2.6	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Haloacetic Acids (five) (HAA5) (ppb)	Quarterly 2002	N	21.1	ND-45	NA	MCL = 60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	Quarterly 2002	N	52.7	6 – 85	NA	MCL = 80/100	By-product of drinking water disinfection

The result in the Level Detected column for Bromate, HAA5 and Bromate is the highest of the four quarterly running annual averages of results from all sampling sites.

Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	TT Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Total organic carbon	Daily 2002	N	4.9	0.6-4.9	N/A	TT	Naturally present in the environment

CITY OF TAMPA WATER QUALITY DATA TABLE – Page 3 of 3

Lead and Copper (Tap Water)

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	July to Sept. 2002	N	0.10	None	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	July to Sept. 2002	N	2	None	0	15	Corrosion of household plumbing systems, erosion of natural deposits

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Result	Range of Results	MCLG	MCL	Likely Source of Contamination
Aluminum (ppm)	May 2002	N	0.12	ND – 0.12	N/A	0.2	Natural occurrence from soil leaching
Chloride (ppm)	May 2002	N	78	19 –78	N/A	250	Natural occurrence from soil leaching
Copper (ppm)	May 2002	N	0.01	ND – 0.01	N/A	1	Corrosion byproduct and natural occurrence from soil leaching
Fluoride (ppm)	May 2002	N	0.70	0.63 – 0.70	N/A	2	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories.
Odor (threshold odor number)	May 2002	N	3	2-3	N/A	3	Naturally occurring organics
Sulfate (ppm)	May 2002	N	170	13-170	N/A	250	Natural occurrence from soil leaching
Total Dissolved Solids (ppm)	May 2002	N	460	320 – 460	N/A	500**	Natural occurrence from soil leaching
** Note: TDS may be greater than 500, if no other MCL is exceeded.							